

California Energy Commission  
Docket Unit  
1516 Ninth Street, MS-4  
Sacramento, California 95814  
Docket Number: 99-DIST-GEN-(2)

To Whom it may concern:

With 29 years experience in energy conservation, the last 18 years including design, installation and maintenance of micro CHP systems i.e. Distributed Generation under one megawatt, we have some understanding of the requirements for successful applications to benefit the end user, and the electrical supply system.

Therefore, given that public comment time at the workshop is limited, we submit our comments herein. Referring to the agenda items in order:

**I-1) Scope.** All energy sources, be they private utility, municipal or special purpose utility, IPP, or self-generated, must be founded on sound economics. Given this fundamental requirement, Distributed Generation has limited application potential. Applications with the most overall benefit utilize waste heat to replace otherwise burned fuels, as will become clear.

Every technology, including renewable sources, has some negative aspect. We believe that, in our economic system, those technologies with the most positive economic return will emerge as the technology of preference. Billions have been spent on various renewable energy source demonstration projects. Those which produce commercially viable energy sources will become more widespread in the natural course of events.

However, like it or not, natural gas fueled systems remain the most economical systems, with acceptable emissions levels, available at present. Thus, we focus a great deal of effort on improving the fuel-energy efficiency in order to conserve this resource.

- We suggest that Distributed Generation be promoted heavily in public service facilities. Schools, Hospitals, Convalescent Homes, and some governmental facilities would be our recommended primary target. We also suggest addressing selected small to medium size commercial operations.
- Coordination among various state agencies and organizations is always a challenge, but we feel that overall management best resides with the CEC. Someone has to “take the point” to streamline the onerous permitting process.
- A positive impact on air quality is ambitious, and unlikely to be achieved, but avoiding air quality degradation is simply a matter of enforcement of existing law.

- Promoting the development of clean, efficient, etc. Distributed Generation technologies will be done by private enterprise. We are always looking for a competitive edge. In the present energy environment, this equates to improved fuel-energy efficiency and, of necessity, ultra-low emissions.
- We submit that the role for Distributed Generation in California is rooted in economics. If Distributed Generation is to play a sustained role in our power supply, it must be competitive with utility provided power. It must also be as convenient for the end user to obtain. There is no good business reason for end users to tolerate the inconvenience of, or provide the capital for, Distributed Generation unless there is significant benefit attached.
- Declaring where Distributed Generation is to be sited to avoid expense to the serving utility is unreasonably prejudicial and discriminatory. Penalizing quality Distributed Generation locations in an established area to, essentially, subsidize new growth violates the basic principle of equal treatment. However, the utility charges for new service work required under Rule 16 do encourage a consideration of self-generation as an alternate. Perhaps a broader definition of new service costs would be in order.

Further, Distributed Generation will be funded by private enterprise where utility power cost is highest. Basic economics imply that highest cost occurs when supply is limited. We do not seriously consider Distributed Generation in areas served by various *Irrigation Districts*, some municipalities, or WAPA. Their low selling price devastates self-generation economics. Further, we are not convinced that utility ratepayers should fund self-generation in areas of lower energy cost anyway.

- I-2)** Technologies should not be limited. However, every project should be evaluated critically. Again, some of this is automatic. No responsible end user will fund the cost, or his share thereof, without assurance of a reasonable return on his investment. However, we do think that all projects should be required to do feasibility analysis under identical ground rules, and the data on which the analysis is based should be certified as correct under pain of penalty (perjury?).

## **II - 1) Vision, Mission and Goals.**

- It is inconceivable that micro Distributed Generation (under 1 mW) can be a truly viable substitute for central power plants and high-voltage distribution systems. Economies of scale are an inescapable fact of economic life. The existing distribution system is too much a part of our infrastructure and represents massive investment. It must remain intact. The goal must be to extend and expand it's usefulness. This is best done through conservation and properly considered Distributed Generation.
- Mandating some level of Distributed Generation in buildings is done in some countries. In this country, we too often see more effort spent on avoiding mandates than on compliance. Placing the burden of new growth on the new growth is reasonable, but that is already done, to a large extent.

- Micro grids? A grid within a grid, or, as it were, an island? We suspect that these are likely to create more problems than solutions.
- Net utility power demand for single buildings is simply not economically possible, except for a very few well-balanced industrial operations which operate 24/7, at this time. Most “buildings” operate about 3,000 “workday” hours/year and are essentially idle the rest of the time. Amortizing the capital cost of self-generation over 3,000 hours instead of 8,000 destroys the economics.
- A wide range of Distributed Generation alternatives and grid power already exists. End user decisions are based on economics and convenience. So long as utility power is most convenient, and not completely unaffordable, utility power will invariably be the first choice.
- The existing power supply system **IS** highly reliable, as clean as existing law and technology can make it, as economical as the operators can make it, and is in the process of becoming even more efficient, in most respects. It is not, and never will be, “secure”. Large central plants and thousands of miles of transmission wires are vulnerable to natural and malevolent disruption. This is just a fact we have to live with.
- Distributed Generation can only mitigate the efficient use of fuels. The fuel-energy efficiency of remote central plants is limited, and is inherently less than what is easily attainable from on-site power production, for selected applications.

**II-2)** Distributed Generation is a very useful tool for generalized improvement of power production and use. It is not a “magic pill”. Viable applications are limited by economic reality, and utility provided power is an integral part of our society and economy. Distributed Generation must be viewed as but one useful tool which eases the burden on the existing power supply infrastructure.

**II-3)** 20% of new electricity production requirements is ambitious. Assuming that 5,000 mW of added capacity is required, then 1000 mW would be Distributed Generation. (1,000) 1mw systems costing about \$2.5 billion, to be largely funded privately? Are there 1,000 viable 1 mW applications? Doubtful! However, there are more than 4,000 applications for 250 kW, or 8,000 for 125 kW.

Assuming the State can fund \$1/kW (\$1 billion) for incentives, then all we have to do is convince 4,000 to 8,000 business managers to find, and spend, \$2 billion for something new, which they really don’t understand! Convincing ever cash short Schools, Hospitals, Public Agency managers, and short term, profit oriented private business managers to find and spend this money, then justify it to their management is no small task. Long-term benefit has little attraction to “bottom line this year” managers. Generalized public benefit has even less if it requires financial commitment.

### III Barriers.

There are only two barriers: time and money! When we identify viable applications, and justify the investment capital, we then face unreasonable and costly delays in the permitting process. A typical permitting progression and time frame, starting with an end user decision to proceed with Distributed Generation! If the project utilizes the incentive program, no final decision will be made until incentive funds are committed. Getting to this point costs someone from \$5,000 to \$15,000, or more, which is at risk. Then we wait 30-90 days for a decision.

Paralleling applications require another +/- \$5,000 investment, and a 2 to 6 month delay for Utility Co. review before the interconnection cost is defined.

Concurrently being processed is the New Source, AQMD permit application costing \$3,000 to \$10,000, and entailing a 3 to 6 month delay for issuance of a permit to construct.

At this point, *someone* has from \$15,000 to as much as \$30,000, or more, at risk and usually 9-10 months have passed and construction can commence. A one year “decision to startup” delay is not uncommon. The process cannot be undertaken lightly.

Short of the Governor, we cannot identify who might have primary authority to address these issues.

### IV Policies to develop for the Strategic Plan

- 1) The first policy issue for a strategic plan is commitment. In the early 80’s the CEC actively promoted CHP Distributed Generation (called cogeneration back then). When promotion stopped, so did installations, in large part. Utility resistance, and open opposition, to cogeneration also became widespread to the point of hostility.

The second is to control and curtail widespread dissemination of misinformation. All through the 90’s our utilities, supported by politicians and nearly every consumer advocate in the state, insisted loudly the de-regulation would provide us with “cheap” power, and “torpedoed” a large number of excellent CHP installations. No amount of historical analysis and economic logic on our part can overcome inherent widespread desire to believe we can get something for nothing, or nearly so, especially when that desire is supported by “authoritative” sources.

- 3) Integrating “Micro grids” and an interconnected grid poses a serious management challenge for the utilities. We suspect this is not warranted.
- 4) Changing the definition of a public utility neither helps nor hinders Distributed Generation deployment.
- 5) Changing Title 24 would not affect Distributed Generation deployment.

**V** No comment.

**VI** Specific Distributed Generation Activities by the Energy commission

- 1) The most important issue is a determination as to whether we will be in a de-regulated energy market or not. On the one hand we hold the competition will provide us with unlimited supplies of “cheap” power (It will not, but it is a nice thought). On the other hand we argue that we have to control “Big Energy” excesses, and, apparently, impose unreasonable, sometimes impossible, burdens on distributed generation in spite of its potential for relief. We cannot have it both ways.

Following closely is determination of whether distributed generation is a long term commitment, rather than an expedient of the moment. Not the reference to cogeneration above.

- Provide a level playing field. If Distributed Generation is to succeed, it cannot be held to unreasonable “reliability” standards. Interconnection cannot be at the mercy and capricious pleasure of the existing utilities. Distributed Generation takes food off their table. It is competition no matter how you slice it. What other industry has to seek its competitors permission to do business? Or, what other industry has to ask its competition WHERE and HOW it can do business? In any other industry, this would violate a notable list of laws. Utility field representatives continue to denigrate self-generation, policy notwithstanding. Some utility engineers continue to view micro systems as though they were 50 megawatt power producers. Modify Rule 21 to more reasonably reflect reality.
- Research, Development and Demonstration Programs are widely perceived as being a few “promoters” feeding at the public trough at taxpayer expense with no apparent corresponding benefit. While conceding that even negative results can be useful, we must also admit that some projects are founded more on hope, illusion and self-service than on science.
- Outreach to target audiences could be quite effective. One example is that a single letter from the CEC to a school board has more positive effect than the most compelling financial argument we can devise. Connecting CEC low interest loan availability for the owners’ share of the cost would also be useful. And, of course, financial inducement in the form of incentives and/or tax breaks are time tested methods of program promotion.

As much as we, as business persons dislike added regulation, we suggest that a fairly strict system assuring professional competence and financial stability be put in place for those firms engaging in Distributed Generation development. It is no secret that cogeneration, during its heyday, suffered almost a death blow from a few firms whose business practices fell somewhat short of impeccably correct. Avoiding a similar fate for Distributed Generation is an essential element if it is to have a reasonable chance of success.

We hope that our comments are useful. We are among the few who have sustained our belief in the benefits of on-site power production through a long period of economic challenge, denigration and a measure of open hostility. We have heard every conceivable form of negative comment, and long since deduced the unspoken, but real reasons for resistance.

Nevertheless, that on-site generation, within the existing power distribution system, enhances grid reliability, serves as a “force multiplier” extending the capacity and life of existing distribution systems, conserves valuable fuel resources and controls energy cost is an inevitable and logical conclusion.

Respectfully submitted.

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